Haynes Hastelloy® D-205 Corrosion Resistant Alloy (discontinued **)

Categories: Metal; Nonferrous Metal; Nickel Alloy; Superalloy

Material Notes: High silicon alloy based on the Ni-20Cr system. Its chief advantages over high silicon-iron based alloys are excellent formability, good resistance to elevated temperature embrittlement, and superior performance In many concentrations of sulfuric acid. D-205 alloy also possesses high resistance to stress corrosion cracking and is considerably more resistant to pitting corrosion than type 316L Stainless and Fe-17Cr-20Ni-5Si alloys.

Given these attributes, D-205 alloy constitutes an ideal sulfuric acid, plate-heat-exchanger material. Also the alloy is very useful for all hardware involved with the processing of highly oxidizing media. An added benefit is that the yield strength of D-205 can be more than doubled by age-hardening.

Information provided by Haynes.

Key Words: D205

Vendors: **Click here to view all available suppliers for this material.**

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Physical Properties	Metric	English	Comments
Environmental Stress Crack Resistance	>= 1008 hour @Temperature 154 °C	>= 1008 hour @Temperature 309 °F	45% MgCl2

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	786 MPa	114000 psi	Mill Annealed
	979 MPa	142000 psi	Aged 24hrs/1000°F
Tensile Strength, Yield	338 MPa @Strain 0.200 %	49000 psi @Strain 0.200 %	Mill Annealed
	717 MPa @Strain 0.200 %	104000 psi @Strain 0.200 %	Aged 24hrs/1000°F
Elongation at Break	28.6 %	28.6 %	in 2in., Aged 24hrs/1000°F
	56.5 %	56.5 %	in 2in., Mill Annealed

Component Elements Properties	Metric	English	Comments
Carbon, C	<= 0.030 %	<= 0.030 %	
Chromium, Cr	20 %	20 %	
Copper, Cu	2.0 %	2.0 %	
Iron, Fe	6.0 %	6.0 %	
Molybdenum, Mo	2.5 %	2.5 %	
Nickel, Ni	64.47 - 64.5 %	64.47 - 64.5 %	
Silicon, Si	5.0 %	5.0 %	

Descriptive Properties			
Critical Pitting Temp		30°C	4% NaCl + 0.1% Fe2(SO4)3 + 0.01 M HCl

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Materials flagged as discontinued ( ) are no longer part of the manufacturer's standard product line according to our latest information. These materials may be available by special order, in distribution inventory, or reinstated as an active product. Data sheets from materials that are no longer available remain in MatWeb to assist users in finding replacement materials.